

Table S1 Comparisons between isolated AFMR and non-isolated AFMR

Variables	Isolated AFMR (n=113)	Non-isolated AFMR (n=376)	P value
Age (years)	70.81±14.24	65.74±13.70	0.001
Female, n (%)	64 (56.6)	114 (30.3)	<0.001
LAd (mm)	47.0 (44.0–52.0)	45.0 (42.0–49.0)	<0.001
LVDd (mm)	50.0 (47.0–54.0)	63.0 (58.0–68.5)	<0.001
LV/LA	1.05±0.13	1.38±0.21	<0.001
LVEF (%)	62.0 (58.0–67.0)	36.0 (29.0–45.5)	<0.001
TRv (cm/s)	290.16±41.29	295.50±53.24	0.286
RA (mm)	46.0 (43.0–51.0)	43.0 (38.0–47.0)	<0.001
RV (mm)	41.0 (36.0–45.0)	40.0 (36.0–44.0)	0.087
Comorbidity			
AF, n (%)	92 (81.4)	97 (25.8)	<0.001
CHD, n (%)	18 (15.9)	177 (47.1)	<0.001
MI, n (%)	2 (1.8)	84 (22.3)	<0.001
Hypertension, n (%)	56 (49.6)	182 (48.4)	0.914
DM, n (%)	18 (15.9)	107 (28.5)	0.011
Cerebral stroke, n (%)	19 (16.8)	51 (13.6)	0.477
NT-proBNP (pg/mL)	1419.5 (733.8–3833.0)	4460.5 (1810.0–11234.5)	<0.001
Serum creatinine (μmol/L)	91.0 (72.5–116.5)	113.0 (86.5–159.0)	<0.001
Medication, n (%)			
Beta-blocker	58 (51.3)	214 (56.9)	0.347
ACEI/ARB/ARNI	30 (26.5)	224 (59.6)	<0.001
CCB	32 (28.3)	81 (21.5)	0.170
MRA	45 (39.8)	260 (69.1)	<0.001
Diuretics	45 (39.8)	200 (53.2)	0.017
Cordarone	13 (11.5)	52 (13.8)	0.631

Quantitative data that exhibited a normal distribution were presented as the mean value ± standard deviation, otherwise median (25th–75th percentile) was used. ACEI, angiotensin-converting enzyme inhibitor; AF, atrial fibrillation; AFMR, atrial functional mitral regurgitation; ARB, angiotensin II receptor blocker; ARNI, angiotensin receptor-neprilysin inhibitor; CCB, calcium channel blocker; CHD, coronary heart disease; DM, diabetes mellitus; LAd, left atrial diameter; LVDd, left ventricular diastolic diameter; LV/LA, left ventricular diastolic diameter/left atrial diameter; LVEF, left ventricular ejection fraction; MI, myocardial infarction; MRA, mineralocorticoid receptor antagonists; RA, right atrial transverse diameter; RV, right ventricle transverse diameter; TRv, peak tricuspid regurgitation velocity.

Table S2 Patient demographics and baseline characteristics

Variables	Training group (n=342)	Validation group (n=147)	P value
Age (years)	66.67±14.31	67.48±13.21	0.099
Female, n (%)	126 (36.8)	52 (35.4)	0.757
Types of mitral regurgitation			0.212
Isolated AFMR, n (%)	81 (23.7)	32 (21.8)	
Non-isolated AFMR, n (%)	261 (76.3)	115 (78.2)	
LAd (mm)	46.0 (42.0–50.0)	46.0 (43.0–49.0)	0.887
LVDd (mm)	60.0 (53.0–66.0)	60.0 (54.0–69.0)	0.393
LV/LA	1.30±0.23	1.33±0.25	0.219
LVEF (%)	41.0 (30.8–57.0)	40.0 (30.0–55.0)	0.342
TRv (cm/s)	295.79±50.60	290.72±51.16	0.958
RA (mm)	43.0 (39.0–47.0)	44.0 (39.0–48.0)	0.521
RV (mm)	40.0 (36.0–45.0)	39.0 (36.0–43.5)	0.155
Comorbidity			
AF, n (%)	127 (37.1)	62 (42.2)	0.294
CHD, n (%)	138 (40.4)	57 (38.8)	0.106
MI, n (%)	65 (19.0)	21 (14.3)	0.209
Hypertension, n (%)	175 (51.2)	63 (42.9)	0.092
DM, n (%)	90 (26.3)	35 (23.8)	0.560
Cerebral stroke, n (%)	49 (14.3)	21 (14.3)	0.990
NT-proBNP (pg/mL)	3611.5 (1405.3–8458.5)	4012.9 (1249.3–9855.8)	0.826
Serum creatinine (μmol/L)	110.9 (82.0–153.5)	100.0 (83.0–142.0)	0.317
Medication, n (%)			
Beta-blocker	196 (57.3)	76 (51.7)	0.252
ACEI/ARB/ARNI	173 (50.6)	81 (55.1)	0.359
CCB	84 (24.6)	29 (19.7)	0.245
MRA	211 (61.7)	94 (63.9)	0.638
Diuretics	173 (50.6)	72 (49.0)	0.745
Cordarone	47 (13.7)	18 (12.2)	0.655

Quantitative data that exhibited a normal distribution were presented as the mean value ± standard deviation, otherwise median (25th–75th percentile) was used. ACEI, angiotensin-converting enzyme inhibitor; AF, atrial fibrillation; AFMR, atrial functional mitral regurgitation; ARB, angiotensin II receptor blocker; ARNI, angiotensin receptor-neprilysin inhibitor; CCB, calcium channel blocker; CHD, coronary heart disease; DM, diabetes mellitus; LAd, left atrial diameter; LVDd, left ventricular diastolic diameter; LV/LA, left ventricular diastolic diameter/left atrial diameter; LVEF, left ventricular ejection fraction; MI, myocardial infarction; MRA, mineralocorticoid receptor antagonists; RA, right atrial transverse diameter; RV, right ventricle transverse diameter; TRv, peak tricuspid regurgitation velocity.

Table S3 Univariate and multivariate logistic regression analyses for AFMR predictors in the training cohort.

Variables	Univariate logistic regression			Multivariate logistic regression		
	OR value	95% CI	P value	OR value	95% CI	P value
Age (years)	1.03	1.01-1.05	0.004			
Female	0.36	0.22-0.60	<0.001			
LAd (mm)	1.05	1.02-1.09	0.004	1.24	1.08-1.43	0.002
LVDd (mm)	0.74	0.69-0.79	<0.001	0.57	0.44-0.74	<0.001
LV/LA	0.00	0.00-0.00	<0.001			
LVEF (%)	1.25	1.19-1.33	<0.001	1.21	1.11-1.33	<0.001
TRv (cm/s)	1.00	0.99-1.00	0.318			
RA (mm)	1.09	1.05-1.12	<0.001			
RV (mm)	1.04	1.00-1.08	0.069			
AF	13.04	7.04-24.16	<0.001	16.26	3.13-84.46	0.001
CHD	0.28	0.15-0.51	<0.001			
MI	0.08	0.01-0.26	<0.001	0.01	0.00-0.22	0.003
Hypertension	1.18	0.72-1.95	0.516			
DM	0.46	0.24-0.88	0.018			
Cerebral stroke	0.80	0.38-1.69	0.561			
LogNT-proBNP	0.31	0.21-0.46	<0.001			
Serum creatinine (μmol/L)	1.00	1.00-1.00	0.383			

AF, atrial fibrillation; AFMR, atrial functional mitral regurgitation; CHD, coronary heart disease; DM, diabetes mellitus; LAd, left atrial diameter; LVDd, left ventricular diastolic diameter; LV/LA, left ventricular diastolic diameter/ left atrial diameter; LVEF, left ventricular ejection fraction; MI, myocardial infarction; RA, right atrial transverse diameter; RV, right ventricle transverse diameter; TRv, peak tricuspid regurgitation velocity.